

**In the Claims:**

1 – 18. (Canceled)

19. (New) A method, comprising the steps of:

monitoring a heartbeat of an exerciser during a non-stationary exercise;

determining a heart rate variability cycle, which is a rate at which the heartbeat rate changes;

detecting positive heartbeat rate peaks of the heart rate variability cycle;

detecting negative heartbeat rate peaks of the heart rate variability cycle;

providing an exhale signal at the positive heartbeat rate peaks to instruct the exerciser to begin exhaling; and

providing an inhale signal at the negative heartbeat rate peaks to instruct the exerciser to begin inhaling;

20. (New) The method of claim 19 further comprising the step of providing a signal to the exerciser signaling when the heart rate variability cycle is stable.

21. (New) The method of claim 19 further comprising the step of providing a signal to the exerciser signaling when the heart rate variability cycle is unstable.

22. (New) The method of claim 19 further comprising the step of instructing the exerciser to obtain a stable heart rate variability cycle before beginning the non-stationary exercise.

23. (New) The method of claim 19 further comprising the step of determining an exercise tempo and providing a tempo signal instructing the exerciser to exercise at the exercise tempo.

24. (New) The method of claim 23 wherein the inhale and the exhale signals are not provided to the exerciser when the exercise tempo is transitioning from a first tempo to a second tempo.

25. (New) The method of claim 19 wherein the inhale and the exhale signals are not provided to the exerciser when an exercise tempo is transitioning from a first tempo to a second tempo.
26. (New) The method of claim 19 further comprising the step of generating a tempo based on the heart rate variability cycle and providing a tempo signal based on the tempo to the exerciser so that the exerciser can synchronize their non-stationary exercise with the tempo.
27. (New) The method of claim 19 wherein at least one of the inhale and exhale signals are a signal selected from the group consisting of an audio signal, a visual signal, and a tactile signal.
28. (New) The method of claim 19 wherein the inhale and exhale signals correspond to a breathing cycle that is coherent with the heart rate variability cycle when the exerciser consciously synchronizes breathing with the breathing cycle.
29. (New) A system, comprising:
  - a heartbeat monitor adapted to monitor a heartbeat of an exerciser during a non-stationary exercise;
  - a heartbeat stability detector adapted to determine a heart rate variability cycle, which is a rate at which the heartbeat rate changes;
  - a heartbeat peak rate detector adapted to:
    - detect positive heartbeat rate peaks of the heart rate variability cycle; and
    - detect negative heartbeat rate peaks of the heart rate variability cycle; and
  - a signal generator adapted to:
    - provide an exhale signal at the positive heartbeat rate peaks to instruct the exerciser to begin exhalation; and
    - provide an inhale signal at the negative heartbeat rate peaks to instruct the exerciser to begin inhalation;
30. (New) The system of claim 29 wherein the heartbeat stability detector is further adapted to provide a signal to the exerciser to signal when the heart rate variability cycle is stable.

31. (New) The system of claim 29 wherein the heartbeat stability detector is further adapted to provide a signal to the exerciser to signal when the heart rate variability cycle is unstable.
32. (New) The system of claim 29 wherein the signal generator is further adapted to instruct the exerciser to obtain a stable heart rate variability cycle before beginning the non-stationary exercise.
33. (New) The system of claim 29 wherein the signal generator is further adapted to determine an exercise tempo and provide a tempo signal to instruct the exerciser to exercise at the exercise tempo.
34. (New) The system of claim 33 wherein the signal generator is further adapted to not provide the inhale and the exhale signals for the exerciser when the exercise tempo transitions from a first tempo to a second tempo.
35. (New) The system of claim 29 wherein the signal generator is further adapted to not provide the inhale and the exhale signals for the exerciser when an exercise tempo transitions from a first tempo to a second tempo.
36. (New) The system of claim 29 wherein the signal generator is further adapted to generate a tempo based on the heart rate variability cycle and provide a tempo signal based on the tempo to the exerciser so that the exerciser can synchronize their non-stationary exercise with the tempo.
37. (New) The system of claim 29 wherein at least one of the inhale and exhale signals are a signal selected from the group consisting of an audio signal, a visual signal, and a tactile signal.

38. (New) The system of claim 29 wherein the inhale and exhale signals correspond to a breathing cycle that is coherent with the heart rate variability cycle when the exerciser consciously synchronizes breathing with the breathing cycle.